

IN THE CLAIMS:

Claims 1-6, 9-14, 17-24, 29, 32-37, 45, 51-56, 62 and 63 were previously cancelled. Claims 7, 8, 15, 16, 25-28, 30, 31, 38-44, 46-50, and 57-61 have been amended herein. All of the pending claims are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as amended.

Listing of Claims

1.-6. (Cancelled)

7. (Currently amended) A semiconductor substrate including at least one laterally unconstrained adhesive patch comprised of a viscous adhesive material, the at least one adhesive patch including a first surface adjacent and supported from beneath by ~~said~~ the semiconductor substrate and a second, smaller exposed surface opposite ~~said~~ the first surface exhibiting a generally planar portion over a substantial portion thereof, ~~said~~ the semiconductor substrate including ~~said~~ the at least one adhesive patch formed by:

providing a semiconductor substrate;

dispensing a viscous adhesive material on ~~said~~ the semiconductor substrate; and

inverting ~~said~~ the semiconductor substrate without effecting substantial lateral confinement of ~~said~~ the adhesive material and maintaining ~~said~~ the semiconductor substrate in an inverted position at least until ~~said~~ the viscous adhesive material sufficiently stabilizes so as to exhibit a desired stable shape and a lateral boundary defining sizes of ~~said~~ the first and second surfaces of ~~said~~ the at least one adhesive patch and wherein at least a substantial portion of ~~said~~ the second, smaller surface of ~~said~~ the at least one adhesive patch exhibits a generally planar configuration and ~~said~~ the size of ~~said~~ the second, smaller surface is smaller than ~~said~~ the size of ~~said~~ the first surface.

8. (Currently amended) The semiconductor substrate of claim 7, wherein dispensing ~~said the~~ viscous adhesive material, comprises:
placing a template, including at least one aperture, on ~~said the~~ semiconductor substrate;
depositing ~~said the~~ adhesive material into ~~said the~~ at least one aperture; and
removing ~~said the~~ template prior to ~~substantially~~ inverting ~~said the~~ semiconductor substrate.

9.-14. (Cancelled)

15. (Currently amended) A flip-chip including at least one laterally unconstrained conductive bump comprised of a viscous conductive material, the at least one conductive bump exhibiting a height-to-width ratio of at least approximately 3 to 1 and including a first surface adjacent and supported from beneath by ~~said the~~ flip-chip and a second exposed surface opposite ~~said the~~ first surface, ~~said the~~ flip chip including ~~said the~~ at least one conductive bump formed by:
providing ~~said the~~ flip-chip with at least one bond pad;
dispensing a viscous conductive material on ~~said the~~ flip-chip to define at least one conductive bump of a selected configuration exhibiting a height-to-width ratio of at least approximately 3 to 1, ~~said the~~ at least one conductive bump in electrical communication with ~~said the~~ at least one bond pad of ~~said the~~ flip-chip and including a first surface adjacent ~~said the~~ flip-chip and a second surface opposite ~~said the~~ first surface; and
inverting ~~said the~~ flip-chip without substantial lateral confinement of ~~said the~~ viscous conductive material and maintaining ~~said the~~ flip-chip in an inverted position at least until ~~said the~~ conductive material substantially stabilizes so as to exhibit a desired stable shape and lateral boundary substantially defining sizes of ~~said the~~ first and second surfaces of ~~said the~~ at least one conductive bump.

16. (Currently amended) The flip-chip of claim 15, wherein dispensing ~~said the~~ viscous conductive material includes:
placing a template, including at least one aperture, on ~~said the~~ flip-chip;
depositing a conductive material into ~~said template aperture~~ the at least one aperture of the template; and
removing ~~said the~~ template prior to inverting ~~said the~~ flip-chip.

17.-24. (Cancelled)

25. (Currently amended) The semiconductor substrate of claim 7, wherein ~~said the~~ viscous adhesive material of ~~said the~~ at least one adhesive patch comprises at least one of the group consisting of a polyimide, a phenolic resin, a thermoplastic, and a thermosetting plastic.

26. (Currently amended) The semiconductor substrate of claim 7, wherein ~~said the~~ at least one adhesive patch comprises at least one lateral edge exhibiting an angle of repose of approximately 20 degrees.

27. (Currently amended) The semiconductor substrate of claim 7, wherein ~~said the~~ at least one adhesive patch comprises at least one trailing edge exhibiting an angle of repose of approximately 13 degrees.

28. (Currently amended) The semiconductor substrate of claim 7, wherein ~~said the~~ at least one adhesive patch comprises at least one leading edge exhibiting an angle of repose of approximately 20 degrees.

29. (Cancelled)

30. (Currently amended) The semiconductor substrate of claim 8, wherein ~~said~~ the template including at least one aperture comprises a print screen including a plurality of apertures.

31. (Currently amended) The semiconductor substrate of claim 8, wherein ~~said~~ the template including at least one aperture comprises a stencil including a plurality of apertures.

32.-37. (Cancelled)

38. (Currently amended) The flip-chip of claim 15, wherein ~~said~~ the at least one conductive bump comprises at least one lateral edge exhibiting an angle of repose of approximately 20 degrees.

39. (Currently amended) The flip-chip of claim 15, wherein ~~said~~ the at least one conductive bump comprises at least one trailing edge exhibiting an angle of repose of approximately 12 degrees.

40. (Currently amended) The flip-chip of claim 15, wherein ~~said~~ the at least one conductive bump comprises at least one leading edge exhibiting an angle of repose of approximately 20 degrees.

41. (Currently amended) The flip-chip of claim 15, wherein ~~said~~ the conductive material of ~~said~~ the at least one conductive bump comprises a conductive polymer material.

42. (Currently amended) The flip-chip of claim 15, wherein ~~said~~ the viscous conductive material of ~~said~~ the at least one conductive bump comprises at least one of the group consisting of a polyimide, a phenolic resin, a thermoplastic, and a thermosetting plastic.

43. (Currently amended) The flip-chip of claim 16, wherein ~~said the template having~~ including at least one aperture comprises a print screen including a plurality of apertures.

44. (Currently amended) The flip-chip of claim 16, wherein ~~said the template having~~ including at least one aperture comprises a stencil including a plurality of apertures.

45. (Cancelled)

46. (Currently amended) A semiconductor substrate including at least one laterally unconstrained adhesive patch comprised of a viscous adhesive material exhibiting a stable, self-supporting shape, the at least one adhesive patch including a first surface adjacent and supported from beneath by ~~said the~~ semiconductor substrate and a second smaller, exposed surface opposite ~~said the~~ first surface, ~~said the~~ second smaller, exposed surface exhibiting a generally planar portion over a substantial portion thereof.

47. (Currently amended) The semiconductor substrate of claim 46, wherein ~~said the~~ viscous adhesive material comprises at least one of the group consisting of a polyimide, a phenolic resin, a thermoplastic, and a thermosetting plastic.

48. (Currently amended) The semiconductor substrate of claim 46, wherein ~~said the~~ at least one adhesive patch comprises at least one lateral edge exhibiting an angle of repose of approximately 20 degrees.

49. (Currently amended) The semiconductor substrate of claim 46, wherein ~~said the~~ at least one adhesive patch comprises at least one trailing edge exhibiting an angle of repose of approximately 13 degrees.

50. (Currently amended) The semiconductor substrate of claim 46, wherein ~~said~~ the at least one adhesive patch comprises at least one leading edge exhibiting an angle of repose of approximately 20 degrees.

51.-56. (Cancelled)

57. (Currently amended) A flip-chip including at least one laterally unconstrained conductive bump comprised of a viscous conductive material, the at least one conductive bump exhibiting a height-to-width ratio of at least approximately 3 to 1 and including a first surface adjacent and supported from beneath by ~~said~~ the flip-chip and a second exposed surface opposite ~~said~~ the first surface.

58. (Currently amended) The flip-chip of claim 57, wherein ~~said~~ the viscous conductive material of ~~said~~ the at least one conductive bump comprises at least one of the group consisting of a polyimide, a phenolic resin, a thermoplastic, and a thermosetting plastic.

59. (Currently amended) The flip-chip of claim 57, wherein ~~said~~ the at least one conductive bump comprises at least one lateral edge exhibiting an angle of repose of approximately 20 degrees.

60. (Currently amended) The flip-chip of claim 57, wherein ~~said~~ the at least one conductive bump comprises at least one trailing edge exhibiting an angle of repose of approximately 13 degrees.

61. (Currently amended) The flip-chip of claim 57, wherein ~~said~~ the at least one conductive bump comprises at least one leading edge exhibiting an angle of repose of approximately 20 degrees.

62.-63. (Cancelled)